UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

October 2, 1979

See Addressees:

Attached is a rough, rough draft of a report on the Valley of the Drums. It represents a rather crude attempt to assemble, assimiliate, sort out and interpret a mass of analytical information that has been generated for the Valley episode, an event that you all have had some association.

I humbly solicit your comments; good and bad, in order that the final report will be representative of the truth as you see it.

Since there seems to be a sense of great urgency surrounding this report (being that I have received at least two recent inquiries regarding it), I implore you to give it your immediate attention. Feel free to mark up your copy and return it or call in your comments to me directly, which ever suits you best. However, I would like your feedback by October 19th. My telephone number is: (201) 321-6743 or (FTS) 340-6743.

Have at it ..... best regards,

Royal J. Nadeau, Ph.D.
Environmental Response Team

Addressees:

Mr. Robert Logan, Div. of Water Quality, Kentucky
Mr. Al Smith, USEPA
Mr. John Gilbert, USEPA-ERT
Dr. Waynon Johnson, USF&W

P.S. Please excuse my lateness. It's been an extremely hectic spring and summer.

U.S. EPA REGION IV

SDMS

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VALLEY OF THE DRUMS

Shepherdsville, Kentucky

DRAFT

Spring 1979

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ACKNOWLEDGEMENT

This report would not be possible without the cooperative efforts of numerous individuals associated with Region IV's Emergency Response Branch, Water Surveillance Branch, Technical Support Branch and Ecology Branch plus the Environmental Response Team and the Kentucky Division of Water Resources.

A.L. TAYLOR DUMP SITE
(VALLEY OF THE DRUMS)

INTRODUCTION

On March 2, 1979, Region IV activated the Revolving Fund to clean up a spill from the Valley of the Drums in Bullit County, Kentucky. Jack Stonebreaker assumed the role of OSC and directed the contractor, OH Materials, EPA's Environmental Response Team, Coast Guard's Gulf and Pacific Strike Team, the Coast Guard's PIA Team, U.S. Fish and Wildlife and the State of Kentucky in a coordinated effort to contain and mitigate the environmental emergency at the Valley of the Drums.

The dump was opened around 1964 and operated by Mr. A.L. Taylor. In 1977, the dump was closed and Mr. Taylor died in early 1978. During the operation of the facility, Mr. Taylor never obtained a permit.

Records obtained from industrial firms contrast from records obtained from the Taylor Company. Taylor's records are incomplete especially regarding a period of heavy activity during 1975 and 1976.

Industrial records indicate a total of 27,389 drums were delivered to the site while Taylor's records show only 7,339 being delivered to the site. Industries that have provided the state with records are: Reliance Universal, Inc. (13,301); Ford Motor Company (10,105); George W. Whitesides Company (3,082); Kurfees Coating (489); Tremco (200); C&C Supply (98); Guardsman Chemical (67); Louisville Varnish (33); and Randal VeVay (14).

Assuming the total of 27,389 drums and the above ground count of 16,383 drums, the remaining 11,006 drums would approximate the number of buried drums on site. This number, however, is based on records from selected industries and would not indicate drums from other sources.

ENVIRONMENTAL INVESTIGATION

A series of field sampling efforts were conducted by EPA and State of Kentucky Water Resources personnel to document the occurrence and extent of contamination in the surface water and soils on the site proper and adjacent receiving waters. The initial sampling was performed to determine oil and grease, the presence of which in the adjacent waters was justification for the use of 311(k) funds for mitigation and cleanup.

EPA/REGION IV AND ERT SAMPLING EFFORTS

The first environmental samples in connection with the A.L. Taylor Site (Valley of the Drums) was collected by Region IV Surveillance and Analysis personnel on February 13, 1979 ([redacted]). On this date, water and sediment samples were collected from Wilson Creek at sites downstream from Valley. This was part of a larger sampling effort that was being performed in connection with other hazardous waste disposal sites in and around the Louisville area that were being investigated.

In the latter part of February (February 22), site specific sampling was performed on the A.L. Taylor site to delineate the types and quantities of hazardous materials present (see Figure 1 in Appendix). At this time, water samples were collected from standing water pools and melt water running off the properties of Wilson Creek. Also, sediment samples were collected at specific sites to determine the presence of contamination in the surface soils.

In early March, during the early stages of cleanup, water and soil samples were collected by John Gilbert, EPA-ERT and Environmental Consultants, Inc., under contract to EPA. These samples were collected from specific areas within the A.L. Taylor properties and downstream in Wilson Creek.

On March 7th, an in-situ examination of Wilson Creek, the remote stream immediately adjacent to the Valley, were conducted by Don Schultz, Region IV Biologist and Royal J. Nadeau, ERT Biologist at the request of the OSC to perform an assessment of the biological and ecological state of the

stream (see Figure 2 in Appendix).

This assessment was performed by sampling and examining the benthic infauna of Wilson Creek. A small dip net (approximately 20 mm in diameter flattened on one side) was used to sample the infaunal community at various locations in the upper reaches of Wilson Creek. Most of the stations were downstream from the Valley of the Drums, with one being on a tributary (Station 2 Control).

Station 1 is located just below the bridge crossing the National Turnpike. The stream bottom is comprised of bricks, concrete chunks and other types of solid rubble that is often times prevalent in streams that are associated with human population centers. We sampled the bottom by holding the dip net downstream, as we overturned some of the in-stream objects. Also, we probed the vegetation overhanging in the stream to dislodge any epifauna present.

Station 2, which we considered as a control station, was located on an unnamed tributary to Wilson Creek, which drains the eaterly slope of the South Park Hills, which are part of the County park systems. We sampled a small segment of the stream just upstream from the bridge on South Park Road and Hornback Road.

Station 3 was located on Wilson Creek approximately three miles downstream from the Valley. The creek had eroded a bed 6-8 feet below the level of the flood plain. The bed was composed of construction material rubble and alluvial clay deposits that was riddled with crayfish burrows.

Station 4 was located downstream from the Valley at the boundry of the county forest. Just upstream from this station, was a small dam that had been installed as part of the instream treatment system. Water was being pumped from behind the dam into a fountain manifold that had been installed

upland. The stream water was aerated to release volatile organics then allowed to trickle over the ground surface back to Wilson Creek.

Station 5 was located on a small stream that originated in the golf course located upland from the Valley. The stream was approximately two feet wide and .25 feet deep at this station. The flow as low but constant.

Station 6 was located on a small feeder stream that flowed into Wilson Creek [redacted] approximately .25 miles downstream. This feeder stream was approximately one foot wide and .5 feet deep. The flow was slight and formed ripples and pools as the stream flowed down the hillside.. The stream bottom was composed of sand and gravel, with occasional clumps of allochonous materials, [redacted] leaves and twigs. This station was considered as another control as it drained a water shed that was within the county forest with little [redacted] from man's activities.

STATE OF KENTUCKY SAMPLING

On March 6th, a meeting was held at the Command Post attended by the follcwing:

NAME	AFFILIATION
Robert Ware	Kentucky Div. of Water Quality
Robert Logan	Kentucky Div. of Water Quality
Robert Bay	U.S. Fish and Wildlife Service
Waynon Johnson	U.S. Fish and Wildlife Service
Don Schultz	USEPA-- Region IV
John Gilbert	USEPA-- ERT
Royal Nadeau	USEPA-- ERT

The primary purpose of this meeting was to recommend a sampling survey that would generate the types of environmental information for the OSC, Jack Stonebreaker.

The consensus of the group was:

a. A sampling of Wilson Creek should be performed as soon as possible to determine the extent of impact relative to chemical and biological parameters.

b. That some acute toxicity tests be performed on water collected from specific locations on Wilson Creek and from the "collection pond." The emphasis was not to determine a TL50 so much as to note any [redacted] toxic effects on the test organisms.

c. That chemical analysis be performed on tissues of aquatic organisms collected from Wilson Creek to determine possible biomass contamination of specific organisms compounds originating on the Valley.

At this meeting the State of Kentucky representatives indicated that they would collect water and biological samples which would then be shipped to Region IV's Athens Laboratory for analyses.

On March 8th, a sampling team consisting of EPA-ERT and State of Kentucky personnel took water and sediment core samples from the same locations as identified for the biological evaluation sampling effort. In addition, water and sediments were collected from an abandoned settling pond within the Valley. Water for bioassays were collected from Station 02, 04 and 08 (collection pit). These samples were then transported to Athens under ice to the Athens Laboratory by Region IV personnel.

On March 19th, benthic organisms (mostly crayfish) and fish (minnows) were collected by State of Kentucky personnel near the same sampling location as previously identified (see Figure 3). These organisms were shipped to Athens under ice for chemical analysis of their tissues.

On April 16-19, 1979, State of Kentucky personnel collected additional biological specimens for chemical analysis. The samples consisted mainly of fish collected from Wilson Creek and some additional downstream station in Bee Lick Creek, Northern and Southern Ditch, and Pond Creek. The fish were collected via electroshocking and hoop nets, then sent on ice to Athens for chemical analysis.

ANALYTICAL METHODOLOGY

Upon receipt by EPA Region IV Surveillance and Analysis Division's Laboratory, the samples were processed and analyzed according to acceptable analytical procedures.

WATER

Water samples were analyzed by a modified procedure which has been devised for Priority Pollutants (revised April 1977).

SEDIMENT

The sediment samples were first processed in a high speed mechanical [redacted] and [redacted] to break down the large soil chunks to a uniform sediment particle size. These homogenates were extracted with acetone/hexane at a 1:1 mixture, then analyzed in a Gas Chromatograph/ Mass Spectrograph.

TISSUE

Tissue analyses were performed at the University of Georgia under contract to EPA-Region IV.

Sample cleanup was accomplished through an automated cleanup device [redacted] which utilizes gel permeation. This procedure separates and sorts according to molecule size. Extraction was according to the FDA Pesticide Analytical Method as modified to accomodate the gel permeation cleanup technique.

RESULTS AND [redacted] DISCUSSION

The extensive environmental sampling and analytical effort revealed the presence of a vast array of inorganic and organic substances in the Valley proper and the adjacent Wilson Creek.

The substances of main concern for this report are the organics, as it is these compounds that information is most scarce. Therefore, more attention will be directed to these substances than the inorganic constituents, [redacted]

A.L. TAYLOR SITE

The results of the February sampling are reported in Table 1. A total of 126 organic compounds were identified as being present in the water running off the site or collected in small puddles. Station AT-5 had the largest assortment of compounds. Station AT-1 and 2 had the least number. Station AT-5 was a large pool of standing water in a small depression from snow melt running off the upper slopes which contained a large number of drums lying on the surface. Subsequent excavation revealed an undetermined number of drums buried in this same area.

Station AT-7 was a settling impoundment which had been constructed by Mr. Taylor to hold wastes emptied from drums that were ~~ever~~turned on the upland slope of the pond. These analyses revealed a large number of solvents, ketones, pthalates and other organic compounds which are used or associated with paint and plastic industries.

The results of the sediment analyses revealed fewer number of organic compounds than the water samples collected from the same area within the Valley. Station AT-4 sediment samples revealed the largest number of compounds (28 distinct identifiable compounds). Aroclor 1254 and 1260 were among the compounds identified from this station along with several solvent type compounds.

WILSON CREEK WATERSHED

The topographical location of the Valley is at the top of the watershed of Wilson Creek. This position also affects the hydrological gradient. The normal stream flow in Wilson Creek adjacent to the Valley is low and subject

to fluctuation ~~fruptration~~ from seasonal storm and melt water contribution. The stream bottom in these upper reaches mainly consists of sand and some clay deposits. These materials are the results of erosion that has carried the materials into the stream from adjacent upland area.

Wilson Creek does not have a USGS gaging station, therefore, there are no historical stream flow data. There is flow in the stream bed throughout the year, although very slight during dry periods.

WATER

The water samples collected on March 8th from Wilson Creek only revealed nine identifiable organic compounds with bis (2-ethyl-hexyl) phthalate occurring at Station 02, 03 04 with station 04 having the largest concentration. [redacted]. DRAFT

An independent laboratory (Environmental Consultants) analyzed a water sample collected slightly downstream from the Valley. It contained methyl pentanone, ethyl benzene and xylene in trace amounts.

In another water sample analyzed by the same laboratory on the same day (March 4), xylene compounds were found in trace amounts.

On a separate sampling run performed by the State of Kentucky in early February (see Figure 5), water samples collected just downstream from the Valley contained a vast array of organic compounds (38 identifiable compounds. See Table 2.). Many of these were present at all of the station sampled in Wilson Creek. Most of the compounds occurring in the water on this sampling date are ones that are associated with paints and solvents. The water samples from the station closest to the Valley, contained elevated levels of methyl ethyl ketone and methyl isobutyl ketone.

SEDIMENTS

The sediment samples collected by the State of Kentucky in Wilson Creek were contaminated with trace amounts of organic compounds (19 identified compounds). Aroclor 1254 and 1260 were present at all station in Wilson Creek in above trace amounts.

ECOLOGICAL EVALUATIONS

The results of the biological surveys of Wilson Creek proper performed by EPA biologists and State of Kentucky biologists are outlined in Table 3. Only those station that were sampled by both groups are listed. The observations made by each are similiar and tend to collaborate each others results.

Some of the stations sampled by each group were not synonimous. For example, Station 04 through 06 of the EPA biological survey were closer to the Valley while Station 04-08 of the State survey were further donwstream outside of Wilson Creek Proper. (TABLE 4).

The observations of the EPA survey for these remaining stations are listed in Table .

The populations of aquatic invertebrates living in Wilson Creek belong to those groups of organisms that are usually found in stream through the physical/chemical features. Many of these organism types can occur in streams that have been disturbed by man's activities. Therefore, their presence in streams is not necessarily indicative of stress being applied to aquatic ecosystem by the contaminants emanating from the Valley.

The presence of the macroinvertebrate species observed indicate that toxic compounds occurring in the water and sediments of Wilson Creek are not having a catastrophic deleterious impact on these populations.

More likely, the impact to the biological resource living in Wilson Creek is in the form of sublethal, low level contamination of biomass. This biomass

...acroinverte...
...appropriate organic...
...ese biological resources as ...
...evels of PCB's that correlates to the ...
...ve to the sampling locations. Out of the 126 ...
compounds found in the Valley, many have a potential fo...
indicated from the Log P values (Table 5).

Log P is an expression of octanol/water partition coefi...
indicate the solubility of a substance in octanol relative to ...
in water. It is expressed as a ratio, for example, a Log P, a va...
4.0 indicates that the material is 10,000 times more soluble in octa...
than water.

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A substance that is soluble in octanol is considered to be potentia...
soluble in some of the biochemicals and that present in living systems. On...
incorporated into living systems, these same materials can interfer with norma...
physiological functions, accumulate in certain tissues and be passed on through
the food web to the next trophic level species.

Published biological concentration factors (BCF) that have been determined
for specific organic chemicals, other than halogenated pesticides, are scarce
indeed. As a result, the impact of many of these compounds in unknown or
not well understood. This is the case for many of the compounds present in
the Valley.

The presence of the abundant population of amphipods and ispods are
indicative of allochthonous based food webs, being that these organisms utilize
dead leaves and similar organic materials for food. These organisms are then
preyed upon by more moible species as a food source, i.e., fish present. It is not

surprising to find this type of energy flow or food web present in a creek like Wilson Creek which flows through the heavily wooded area near the Valley.

An interesting aspect regarding the fate of contaminants are large molecule organics, with various degrees of water solubility. Those that are rather insoluble are sorbed onto the particulate or suspended matter, i.e., eroded soil particles, dead leaves and bark pieces, etc. Some of these contaminants are deposited in the stream bottoms or in shallow shoal areas. Some are incorporated into the food webs when consumed by the indigenous populations feeding upon the allochthonous materials or bottom deposits.

It so happens that the organic scan performed on the tissues collected were for PCB's and pesticide compounds. The water analyses did not indicate the presence of halogenated pesticides in the Valley, therefore, it is not surprising that these type compounds were not detected in the organisms analyzed. These same analyses do indicate that there are other compounds, some of which are known toxics, i.e., Priority Pollutants, etc., that are present in the Valley. These are the types of compounds that if incorporated into the biological resouts could seriously affect the utility of these resources. This phenomena has been well documented for Mirex in Lake Ontario and Kepone in the James River. In both cases, the biological resouts affected were determined to be unfit for consumption or any other type of exploitation.

Since the tissue extracts were only analyzed for PCB's and halogenated pesticides, other organic compounds may be present in the tissues, therefore, it may be wise to expose these extracts to GC/MS examination. GC/MS would reveal the presence of other compounds, i.e., PNA's that might be present.

MODE OF CONTAMINATION

The main mechanism of environmental contamination to the aquatic resources is via surface and just below the surface runoff into the Wilson Creek watershed. This was obvious in the initial EPA investigation and actually triggered the activation of a 311(k) cleanup by Region IV.

Surface water containing oils were sighted at this time, however, the underlying, more serious concern related to the numerous potentially toxic compounds that were in the drums.

The discharge of toxic compounds from the Valley is obvious but not easily quantified. Surface runoff is dependent upon rainfall and snowfall. An examination of the Climatological Data Record for the Louisville Weather Office of the National Weather Service located at Standiford Field Airport revealed fluctuation in amounts and types of precipitation for the spring when most of the sampling and mitigation activities were occurring.

The actual area of the Valley containing drums was about 10.1 acres as determined from the USGS Topographic Map (Brooks, Kentucky Quadrangle). The soils in the Valley are relatively impervious, therefore, most of the precipitation falling on these 10 acres will end up as runoff.

The collection pond and collection ditches were designed to entrap most of the runoff emanating from the drums storage area. According to the latest estimates, the effluent flow from the in-place treatment system is approximately 227 liters/min (60 gals/min). The system is operated for ten days out of a month during the summer, thus, the discharge from the Valley for this summer was approximately 327,059.5 liters/day. Negating evaporation from the collection pond, the discharge volume would approximate the amount of water being contributed to Wilson Creek from the Valley, prior to the mitigation procedures.

Knowing the discharge rate and the concentrations of materials in this discharge, it is obvious that significant amounts of toxics were being con-

tributed to Wilson Creek from the Valley. For example, Diethyl Phthalate, which is one of the Priority Pollutants, would be discharged from the Valley at the rate of 8.5 grams/day for the summer months; perhaps more for the months when flow would be greater.

TOXIC EFFECTS OR ORGANIC EFFECTS FOUND IN THE VALLEY.

When the results of the initial environmental sampling revealed the extent and types of organic compounds in the Valley, a literature search was performed to determine the known effects of these compounds. Table 7 categories the effects according to the effects documented in the Registry of Toxic Effects (Fairchild, et al, 1977).

Out of the 142 compounds, 40 are included in the Human Effects section of the Registry of Toxic Effects, 27 are in the Carcinogenic Effects Section, and six are in the Teratogenic Effects Section of the Registry.

In order for a substance to be listed in the Carcinogenic Effects Section, there must be documented evidence that malignant tissues are produced by the substance in the body of the test animal. For a material to be included on the Teratogenic Effects, it must be documented that changes in offspring are produced but are not transmissible to their offspring. Those substances that are listed in the Human Effects have been found to have produced responses that is considered deleterious in some manner by the panel of experts that review and screen these materials.

Literature Cited and Data Sources

1. McLeese, D.W.; V. Zitko and M.R. Peterson 1979. Structure-Lethality relationships for phenols, anilines and other aromatic compounds in shrimp and clams. CHEMOSPHERE 2: pp 53-57

2. Veith, Gilman D. and R.T. Morris 1978. A rapid Method of estimating Log P for organic chemicals. EPA-600/3-78-049. 16 pgs.

3. Standen, Anthony (editor) 1964. Encyclopedia of Chemical Technology. Vols. 1-22, Second Edition. John Wiley and Sons, Inc.

4. Stecher, Paul G. (editor) 1968. The Merck Index, Eighth Edition Merck and Company, Inc.

5. Fairchild, Edward J and R.J. Lewis and R.L. Tatken (editors) 1977. Registry of Toxic Effects of Chemical Substances, Vol. 2. U.S. Department of Health, Education and Welfare, DHEW, Publ. #78-104-A

TABLE 1.

COMPOUND (ppb)	AT-1 WATER	AT-1 SEDIMENT	AT-2 WATER	AT-2 SEDIMENT	AT-3 WATER	AT-3 SEDIMENT	AT-4 WATER	AT-4 SEDIMENT	AT-5 WATER	AT-6 WATER	AT- WATER
Benzoic Acid 1/									1-25	1-10	10-50
Methyl Benzoic Acid (3 isomers)					10-100		10-100		1-25	1-10	10-50
C_9 Alkyl Benzoic Acid					10-100		1-10		1-25	1-10	1-10
C_8 Alkyl Benzoic Acid							1-10			1-10	1-10
Methyl Benzene Sulfonamide			7.9						1-25		1-10
8 Unidentified compounds 1-10 ppb			7		18		16	37	24	20	
3 Unidentified compounds 10-100 ppb	1		6		11		11	1	13	1	
Xylene (2 isomers)					260		120	330	470	62	380
Methyl Pentanol											3.7
Methyl Cyclopentanol											42
Dimethyl Pentanone											37
Butoxyethanol											73
Methyl Hydroxy Pentanone					34		170		220	28	200
C_9 Alkyl Benzene (3 isomers)					64		21	10-100	7.2	5.7	24
Cyclohexanone									2.9		66
Dibutoxymethanol (2 isomers)					65		150		56	15	60
Methyl Styrene					48						9
C_9 Alkyl Benzene (3 isomers)					22		11	10-100	26		28
a,a Dimethyl Benzene Methanol					5.6					19	86
C_9 Alkyl Styrene					4.7						7.3
Methyl Benzene Methanol											2.3
Isophorone 1/										15	77
Phenoxy Methyl Oxirane											15
Phenyl Ether								1-10		4.4	2.7
Chlorophenoxypropanol											18
Dimethyl Phthalate 1/							8.7		9.6	13	16
Phenoxypropanediol											57
Tetraoxadodecane			220		6.6		20		7.2	2.7	29
Diethyl Phthalate 1/	9.4		17		42		4.9		29	26	44
Methyl Propyl Ester of Benzoic Acid					7.5				17		3.7
Pentadecapentadecane			320		27					4.7	9.1
Bis (2-ethylhexyl) Phthalate 1/	13		45		38		4.9		36	7.4	27
Methyl Butanoic Acid								120			1050
Pentanoic Acid											1-10
Phenol 1/							T<1	T<1	T<1	T<1	44
Methyl Phenol							1-10	9.5	1-25	1-10	10-50
C_9 Alkyl Phenol (3 isomers)					1-10				1-25	100	1-10
C_8 Alkyl Phenol					96				1-25		1-10
Ethyl Hexanoic Acid							92		10-100	10-100	10-50
Dimethyl Propanol							10-100			380	10-50
Phthalic Acid							1-10	8	1-25	100	1-10
trans-1,2-dichloroethylene 1/	T<5	T<.025	T<5		75	T<.025	26		36	T<5	6.4
Toluene 1/ 2/					340	.29	160		180		160
Ethyl Benzene 1/					69	.6	10		24		31
Acetone						6.0			400		730
Trichlorotrifluoroethane											5.4
Methyl Ethyl Ketone 1/					330				470		690
Hexane											23
Methyl Isobutyl Ketone 1/							380		1100		1600
2-hexanol							78		9.6	T<5	37
2-methyl-1-propanol							T<5		T<5		5.2
Tetrachloroethane	6.4		18		12		5.7		12	6.2	
2-Butanol									T<5		T<5
2-hexanol									T<5		
1,1-dichloroethane					T<5		T<5		T<5		T<5
1,1-dichloroethane											
Vinyl Chloride 1/							T<5				T<5
Dimethyl disulfide					6						
Methylene Chloride 1/	6.6		7.9		5.3				9.4	7.4	
Trimethyl Cyclohexanone					32					15	
Methyl Benzene Methanol										1.2	
Carbonic Acid, Butyl Phenyl Ester										3.5	
Propoxy Butane					38					1.2	
Di-n-butyl Phthalate 1/	39		7.5		5.6	1-10	10		9.6	.16	
Fluoranthene 1/							4.9		7.2	T<1	
Dimethyl Phenol (3 isomers)										1-10	
Hexanol Acid										32	
Hydroxy Methoxy Benzene					1-10				1-25	1-10	
Pentachlorophenol 1/ 2/										4.3	
Naphthalene 1/					1.9	11	T<1		4.5		
1,1,1-trichloroethane									9.4		
Camphor 1/									230		
C_9 Alkyl Benzoic Acid						1-10	1-10		1-25		
Methyl esters of Ethyl Hexanoic Acid									1-25		
Benzene Propanic Acid									1-25		
Heptanol									14		
Heptanone									220		
Indene									214		
Methyl (methyl ethanol) cyclohexanol									62		
a-Terpineol									400		
Terpinene--ol									110		
Isophorone 1/					99		20		59		
Quinoline									9.6		
Methyl Naphthalene								1-10	9.6		
Acenaphthene 1/									12		
Dibenzofuran									8.8		
Beta-naphthonitrile									4.9		
Fluorene									32		
Tributyl Ester of Phosphoric Acid									7.2		
Phenanthrene/Anthracene 1/								1-10	8.7		
Butyl Methyl Benzene Sulfonamide									17		
Pyrene 1/									7.2		
Methyl Octanone									7.2		
Butoxy Propanol							3.5				
C_9 Alkyl Styrene					4.7		6.2				
Methyl (Propoxyloxy) Ethoxy Propanol					24		110				
Butoxy Ethoxy Ethanol							32				
~~Isophorone~~							~~44~~				
Dimethyl Phenol							11				
Tetra methyl Pentanone							1-10				
Dibutyl Ether					5.6		8.2				
C_8 Alkyl Benzene					1.4						
C_9 Alkyl Phenol					11			1-10			
C_8 Alkyl Styrene					2.5			1-10			
Methyl Heptenone			4.5								
Trimethyl Phenol Diol	6.7										
Trimethyl hexane	4.9										
Methyl Propoxy Propanol	3.7										
Hydroxy Propoxy Propanol	3.2										
Butoxy Ethoxy Methane											
Methyl ester of Acetyl											
Undecanoic Acid											
Dimethyl Ethyl Benzoic Acid											
Durylene											
Methoxymethylethoxy Propanol											
Dibutyloxy Propanol											
1-hydrindenone											
Methyl Propanoic Acid											
Ethyl Pentanoic Acid											
Octanoic Acid											
Isopropanol											
Ethyl Hexanol											
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Methoxyethyl Benzene											
Dichloropropene 1/											
Ethyl Hexyl Diphenyl								1-10			
Trimethyl Phenyldihydroindene								1-10			
Dibutyl Ether and Anti 2								14			
Methyl Phenanthrene								1-10			
Alkyl Benzyl Phthalate 1								1-10			
Naphthoic Acid								7.4			
Hexanoic Acid								4.0			
Decanoic Acid								3.2			
Heptanoic Acid								4.0			
Octadecanoic Acid								79			
Hexadecanoic Acid								18			
Tetradecanoic Acid								370			
								200			

1/ denotes designated Hazardous Substances under Section 311.

TABLE 2.

COMPOUND (ppb)	WC-001 WATER	WC-001 SEDIMENT	WC-002 WATER	WC-002 SEDIMENT	WC-003 WATER	WC-003 SEDIMENT	WC-004 WATER	WC-004 SEDIMENT
Benzoic Acid 1/			1-10		1-15			T<5
Methyl Benzoic Acid (2 isomers)	14		1-10		1-15			
C9 Alkyl Benzoic Acid			1-10					
C8 Alkyl Benzoic Acid	P.7		1-10		1-15			
Methyl Benzene Sulfonamide								
5 Unidentified Compounds 1-10	1.3		12		15		18	
1 Unidentified Compounds 10-100	1		1		2			
Xylene (2 isomers)	6.3		68		22		13	
Methyl Pentanol								
Methyl Cyclopentanol								
Dimethyl Pentanone								
Butoxyethanol								
Methyl Hydroxy Pentanone	4.5							
C9 Alkyl Benzene (3 isomers)	3.5		9				1.0	
Methylhexanone	5.1			T<5				T<5
Dibutoxymethanol (2 isomers)	3.5		4		3.3		1.0	
Methyl Styrene								
C9 Alkyl Benzene (5 isomers)	9.6		40		9.2		1.9	
1,2 Dimethyl Benzene Methanol	^3		18		8.4		6.3	
C9 Alkyl Styrene								
Methyl Benzene Methanol								
Isophorone 1/								
Phenoxy Methyl Oxirane								
Phenyl Ether								
Chlorophenoxypropanol								
Dimethyl Phthalate 1/	2.2							
Phenoxypropanediol								
Tetraoxadodecane	1.2		16		2.2		1.5	
Diethyl Phthalate 1/	18				11		4.0	
Methyl Propyl Ester of Benzoic Acid								
[redacted]								
Pentaoxapentadecane	4.3		30		6.2		5.1	
Bis (2-ethylhexyl) Phthalate 1/	T<1							
Methyl Butanoic Acid		T<5	1-10					
Pentanoic Acid		T<5						
Phenol 1/	T<1		1-10		T<1		T<1	
Methyl Phenol		T<5						T<5
C9 Alkyl Phenol (3 isomers)			1-10					T<5
C8 Alkyl Phenol				T<5				
Ethyl Hexanoic Acid	35				33		25	
Dimethyl Propanol	3.5				1-15		6.2	
Phthalic Acid								
trans-1,2-dichloroethylene 1/	43		114					
Toluene 1/ 2/			31					
Ethyl Benzene 1/			6.5					
Acetone	T<100		2500					
Trichlorotrifluoroethane								
Methyl Ethyl Ketone 1/	T<100		6300					
Hexane								
Methyl Isobutyl Ketone 1/	2600		13,000					
2-hexanol								
2-methyl-1-propanol								
Tetrachloroethane								
1-butanol			24					
1-hexanol	T<5		36					
1,1-dichloroethane								
1,1-dichloroethane								
Vinyl chloride 1/	T<5		T<5					
Dimethyl disulfide								
Methylene Chloride 1/	58		82					
Trimethyl Cyclohexanone								
Methyl Benzene Methanol								
Carbonic Acid, Butyl Phenyl Ester								
Propoxy Butane								
Di-n-butyl Phthalate 1/								
Fluoranthene 2/								
Dimethyl Phenol (3 isomers)	T<1							
Hexanoic Acid		T<5						T<5
Hydroxy Methoxy Benzene								T<5
Pentachlorophenol 1/ 2/								
Naphthalene 2/			3.6		T<1.0		T<1.0	
Trichloroethane								
Camphor 2/								
C8 Alkyl Benzoic Acid	1.2							
Methyl esters of Ethyl Hexanoic Acid	3.2		100		16		1.3	
Benzene Propanic Acid		T<5						T<5
Heptanol			48		15		11	
Heptanone	62		108		48		25	
Indene								
Methyl (methyl ethanol) cyclohexanol								
a-Terpineol								
Terpinene-4-ol								
Isophorone 2/								
Quinoline								
Methyl Naphthalene								
Acenaphthene 2/								
Dibenzofuran								
Beta-naphthonitrile								
Fluorene								
Tributyl Ester of Phosphoric Acid								
Phenanthrene/Anthracene 2/								
Butyl Methyl Benzene Sulfonamide								
Pyrene 2/								
Methyl Octanone								T<5
Butoxy Propanol	1.3							
C9 Alkyl Styrene			5.0		T<1.0			
Methyl Tripropoxyloxyl Ethoxy Propanol	2.2		61		22		17.0	
Butyoxy Ethoxy Ethanol								
Quinoline								
Dimethyl Phenol								
Tetra Methyl Pentanone								
Dibutyl Ether								
C9 Alkyl Benzene								
C9 Alkyl Phenol								
C9 Alkyl Styrene								
Methyl Heptenone								
Trimethyl Pentanediol								
Trimethyl Hexane								
Methyl Propoxy Propanol								
Hydroxy Propoxy Propanol								
Butoxy Propoxy Methane								
Methyl Ester of Acetyl								
Pentanoic Acid	29							
Dimethyl Ethyl Benzoic Acid	1.7							
Camphor		T<5						
Methoxymethylethoxy Propanol	4.9							
Dibutyloxy Propanol	3.9		5		2.2		2.3	
C8 Hydrindanone	1.9							
Methyl Propanoic Acid			1-10					
Ethyl Pentanoic Acid			1-10		1-15		6.1	
Butanoic Acid			1-10					
Isopropanol			15					
Methyl Alcohol								
Hydrogenofurfurone								
Methoxyethyl Benzene								
Trimethoxybenzene								
Tetramethyl Phenylidinyaroindene								
Aroclor 1254 and 1260 1/		.13		3.0		.0097		.52
C3 Alkyl Phenanthrene								
Methyl Benzyl Phthalate 1/								
Octanoic Acid								
Nonanoic Acid								
Decanoic Acid								
Undecanoic Acid								
Dodecanoic Acid								
Tridecanoic Acid								
Tetradecanoic Acid		T<5		T<5		T<5		T<5

* denotes designated Hazardous Substances under Section 311.

SHED

EPA (March

Station 01.

Amphipoda

Gammarus sp

Isopoda

probably Liroeu

Tipulidae

Tipula sp.

Station 02. (Control Unna

to Wilson Cre

Amphipoda

probably Gammarus sp.

Isopoda

probably Liroeus sp.

Decopoda

probably Cambarus sp. (juveniles

Platyhelminthes

Turbellarid flatworms

Mollusca

Gastropoda

Probably Physa sp. (snails)

Ephemeroptera

Unidentified

Trichoptera

Unidentified

Gammarus sp.

Isopoda

Liroeus sp.

Decopoda

Cambarus sp.

Station 02. (Fairdale Road Bridge Area)

Amphipoda

Gammarus sp.

Isopoda

Liroeus sp.

Decopoda

Cambarus sp.

Mollusca

Gastropoda

Physa sp.

Trichoptera

Limnephilidae

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TABLE 4.

EPA
MACROINVERTEBRATE SURVEY
March 7, 1979

STATION	OBSERVATIONS
04 Just downstream from aerator	Isopoda probably Lirceus sp. Amphipoda probably Gammarus sp. Oligochaeta unidentified
05 Just downstream from Golf Course pond outlet upstream from Valley	Isopoda probably Lirceus sp. Decopoda probably Cambarus sp. Amphibia salamander egg masses
06 Riffle-pool area on feeder stream into Wilson Creek	Amphipoda probably Gammarus sp. Isopoda probably Lirceus sp.

TABLE 5.

COMPOUND (999)	Log P *	BCF *
Benzoic Acid 2/		
Methyl Benzoic Acid (3 Isomers)		
C3 Alkyl Benzoic Acid		
C4 Alkyl Benzoic Acid		
Methyl Benzene Sulfonamide		
2 Unidentified Compounds		
13 Unidentified Compounds		
Xylene (2 Isomers)		
Methyl Pentanol	1.25	
Methyl Cyclopentanol		
Dimethyl Pentanone		
Butoxyethanol		
Methyl Hydroxy Pentanone		
C3 Alkyl Benzene (3 Isomers)		
Methylhexanone	.81, .95	
Dibutoxymethanol (2 Isomers)		
Methyl Styrene		
C4 Alkyl Benzene (3 Isomers)		
3,4 Dimethyl Benzene Methanol		
C4 Alkyl Styrene		
Methyl Benzoic Acetate		
Isophorone 2/		
Phenoxy Methyl Oxirane		
Phenyl Ether		
Chlorophenoxyethanol		
Dimethyl Phthalate 2/	2.11	
Phenoxypropanediol		
Tetradecadecane		
Diethyl Phthalate 2/	3.15	
Methyl Propyl Ester of Benzoic Acid		
Pentadecapentadecane		
Bis (2-ethylhexyl) Phthalate 2/		
Methyl Butanoic Acid		
Pentanoic Acid		
Phenol 2/	1.49, 1.64	
Octyl Phenol	1.92, 1.94	
C3 Alkyl Phenol (3 Isomers)		
C4 Alkyl Phenol		
Ethyl Hexanoic Acid		
Dimethyl Propanol		
Phthalic Acid		
Tetrachloroethylene 2/		
Toluene 2/ 2/		
Ethyl Benzene 2/		
Acetone		
Trichlorotrifluoroethane		
Methyl Ethyl Ketone 2/		
Hexane		
Methyl Isobutyl Ketone 2/		
Benzaldehyde		
Dimethyl-1-propanol	.65, .76, .83, .74	
Tetrachloroethane	2.66	
Butanol	.65, .61	
Methexanol		
1,1-dichloroethane	1.79	
1,1-dichloroethane		
Vinyl Chloride 2/		
Dimethyl disulfide	1.77	
Methylene Chloride 2/		
Trimethyl Cyclohexanone		
Methyl Benzene Methanol		
Carbonic Acid, Butyl Phenyl Ester		
Propoxy Butane		
Di-n-butyl Phthalate 2/	5.15	
Fluoranthene 2/		
Dimethyl Phenol (3 Isomers)	2.36	
Hexanoic Acid	1.94, 1.90	
Hydroxy Methoxy Benzene		
Pentachlorophenol 2/ 2/	5.12, 2.15, 4.05	7.70, 1.99
Naphthalene 2/	3.76, 3.32	4.26
1,1,1-trichloroethane		
Camphor 2/		
C3 Alkyl Benzoic Acid		
Methyl esters of Ethyl Hexanoic Acid		
Benzene Propanic Acid		
Heptanol		
Heptanone		
Indene	2.92	
Methyl (methyl ethanol) cyclohexanol		
a-Terpineol		
Terpinene-4-ol		
Isophorone 2/		
Quinoline		
Methyl Naphthalene		
Acenaphthene 2/	3.98	
Dibenzofuran		
Deca-hydronaphthonitrile		
Fluorene		
Tributyl Ester of Phosphoric Acid		
Phenanthrene/Anthracene 2/		
Butyl Methyl Benzene Sulfonamide		
Pyrene 2/		
Methyl Octanone		
Butoxy Propanol		
C4 Alkyl Styrene		
Methyl (2-butoxyethoxy) Ethoxy Propanol		
Butoxy Ethoxy Ethanol		
Quinoline		
Dimethyl Octanol		
Tetra Methyl Pentadecanone		
Dibutyl Ester		
C6 Alkyl Benzene		
C5 Alkyl Phenol		
C5 Alkyl Styrene		
Methyl Nonenone		
Trimethyl Pentadiol		
Trimethyl Hexane		
Methyl Propoxy Propanol		
Hydroxy Propoxy Propanol		
Propoxy Propoxy Methane		
Ethyl Ester of Butyl		
Isophorone 2/	1.40	
Dimethyl Ethyl Benzoic Acid		
Fluorene		
Methoxymethylethoxy Propanol		
Butoxy Propanol		
Dihydroisophorone		
Methyl Propanoic Acid		
Methyl Pentanoic Acid		
Hexanoic Acid		
Propanol		
C4 Alcohol		
Dimethylbenzofurene		
Ethoxymethyl Benzene		
Trifluoromethyl 2/		
Trimethyl Phenyl Cyclohexene		
Indene and Indene		
Methyl Phenanthrene		
Bis (2-ethylhexyl) Phthalate 2/		
Hexanoic Acid		
Octanoic Acid		
Nonanoic Acid		
Decanoic Acid		
Undecanoic Acid		
Dodecanoic Acid		
Tridecanoic Acid		
Tetradecanoic Acid		

* BCF = Bio concentration factor

* Log P = Values from ISHOW DATA BANK

Denotes designated Hazardous Substances under Section 311.

TABLE 6.

COMPOUND (cont)	PAINT	SOLVENT	PLASTICS	P'SERVATIVE	SEDATIVE	FRAGRANCES	FLAVORS	DYE	ANTISEPTIC	ANTIMICRO	FLAVORS	ANTIOXIDANT
Benzoic Acid 1/												
Methyl Benzoic Acid (3 isomers)												
C_8 Alkyl Benzoic Acid												
C_9 Alkyl Benzoic Acid												
Methyl Benzene Sulfonamide												
2 Unidentified compounds												
13 Unidentified compounds												
Xylene (2 isomers)		+										
Methyl Pentanol						+						
Methyl Cyclopentanol												
Dimethyl Pentanone												
Butoxyethanol												
Methyl Hydroxy Pentanone												
C_9 Alkyl Benzene (3 isomers)												
Methylcyclohexanone		+										
Diburoxymethanol (2 isomers)												
Methyl Styrene			+									
C_{10} Alkyl Benzene (5 isomers)												
2,4 Dimethyl Benzene Methanol												
C_9 Alkyl Styrene												
Methyl Benzene Methanol		+										
Isophorone 1/												
Phenoxy Methyl Oxirane												
Phenyl Ether			+									
Chloropheneoxypropanol												
Dimethyl Phthalate 1/			+									
Phenoxypropanediol		+										
Tetraoxadodecane			+									
Diethyl Phthalate 1/												
Methyl Propyl Ester of Benzoic Acid												
Pentaoxapentadecane			+									
Bis (2-ethylhexyl) Phthalate 1/												
Methyl butanoic Acid					+							
Pentanoic Acid							+					
Phenol 1/		+										
Methyl Phenol			+									
C_3 Alkyl Phenol (3 isomers)			+									
C_4 Alkyl Phenol			+									
Ethyl Hexanoic Acid						+						
Dimethyl Propanol			+									
Phthalic Acid												
Trimethylcyclohexylene 1/												
Toluene 1/ 2/		+										
Ethyl Benzene 1/			+									
Acetone		+										
Trichlorotrifluoroethane		+										
Methyl Ethyl Ketone 1/	+	+										
Hexane		+						+				
Methyl Isobutyl Ketone 1/	+	+										
2-Hexanol												
2-Methyl-1-propanol									+			
Tetrachloroethane												
1-Butanol						+	+					
1-Hexanol									+			
1,2-Dichloroethane												
1,1-Dichloroethane												
Vinyl Chloride 1/			+									
Dimethyl Disulfide												
Methylene Chloride 1/		+										
Trimethyl Cyclohexanone												
Methyl Benzene Methanol												
Carbonic Acid, Butyl Phenyl Ester												
Propoxy Butane												
Di-n-butyl Phthalate 1/												
Fluoranthene 1/												
Dimethyl Phenol (3 isomers)									+			
Hexanoic Acid										+		
Hydroxy Methoxy Benzene												
Pentachlorophenol 1/ 2/			+									
Naphthalene 1/					+			+				
Trichloroethane												
Camphor 1/	+	+	+	+								
C_3 Alkyl Benzoic Acid								+		+		
Methyl esters of Ethyl Hexanoic Acid												
Benzene Propanic Acid												
Heptanol		+										
Heptanone												
Indene												
Methyl (methyl ethanol) cyclohexanol												
a-Terpineol						+	+					
Terpinene-4-ol												
Isophorone 1/		+										
Quinoline				+				+				
Methyl Naphthalene		+										
Acenaphthene 1/			+					+				
Dibenzofuran												
Beta-naphthonitrile												
Fluorene												
Tributyl Ester of Phosphoric Acid												
Phenanthrene/Anthracene 1/												
Butyl Methyl benzene Sulfonamide												
Pyrene 1/												
Methyl Octanone												
Butoxy Propanol			+									
C_9 Alkyl Styrene			+									
Methyl Tetrapoxyhexyl Ethoxy Propanol												
Butoxy Ethoxy Ethanol												
Quinoline												
Dimethyl Phenol												
Tetra Methyl Pentanone												
Dibutyl Ether		+										
C_5 Alkyl Benzene												
C_4 Alkyl Phenol											+	+
C_4 Alkyl Styrene												
Methyl Heptenone		+										
Trimethyl Pentanediol								+				
Trimethyl Hexane												
Methyl Propoxy Propanol												
Hydroxy Propoxy Propanol												
Butoxy Propoxy Methane												
Butyl Ester of Acetyl												
Undecanol (iso)								+				
Dimethyl Ethyl Benzoic Acid												
Octanone												
Methoxymethylethoxy Propanol												
Butoxyethoxy Propanol												
2 Undecanone												
Methyl Propanoic Acid			+									
Octyl Pentanoic Acid		+	+					+				
Hexanoic Acid		+									+	+
Decanol		+						+	+			
Octyl Alcohol												
Tetramethylfuranone												
Methoxyethyl Benzene												
Undecanol (n)												
Octyl Ester, Undecanoic												
Trimethyl Phenylcyclohexylene												
Octyl Ester and Ether 1/												
Ethyl Phenanthrene												
Octyl Ester, Undecanoic 1/												
Octanoic Acid												
Undecanoic Acid												
Decanoic Acid												
Methylundecanoic Acid												
Methylundecanoic Acid												
Dimethylundecanoic Acid												

1/ denotes designated Hazardous Substances under Section 311.

TABLE 7.

COMPOUND (ppb)	HUMAN EFFECTS	CARCINOGEN	TERATOGEN
Benzoic Acid 1/	+	-	-
Methyl Benzoic Acid (2 isomers)	+	+	-
C_3 Alkyl Benzoic Acid	-	-	-
C_4 Alkyl Benzoic Acid	-	-	-
Methyl Benzene Sulfonamide	-	-	-
2 Unidentified compounds	-	-	-
13 Unidentified compounds	-	-	-
Xylene (2 isomers)	+	-	-
Methyl Pentanol	-	-	-
Methyl Cyclopentanol	-	-	-
Dimethyl Pentanone	-	-	-
Butoxyethanol	+	-	-
Methyl Hydroxy Pentanone	-	-	-
C_3 Alkyl Benzene (3 isomers)	-	-	-
Cyclohexanone	+	+	-
Dibutoxymethanol (2 isomers)	-	-	-
Methyl Styrene	+	-	+
C_4 Alkyl Benzene (5 isomers)	-	-	-
a,a Dimethyl Benzene Methanol	-	-	-
C_3 Alkyl Styrene	-	-	-
Methyl Benzene Methanol	-	-	-
Isophorone 2/	+	-	-
Phenoxy Methyl Oxirane	-	-	-
Phenyl Ether	-	-	-
Chlorophenoxypropanol	-	-	-
Dimethyl Phthalate 2/	+	+	+
Phenoxypropanediol	-	-	-
Tetraoxagodecane	-	-	-
Diethyl Phthalate 2/	+	+	+
Methyl Propyl Ester of Benzoic Acid	-	-	-
Pentaoxapentadecane	-	-	-
Bis (2-ethylhexyl) Phthalate 2/	+	+	+
Methyl Butanoic Acid	-	-	-
Pentanoic Acid	-	-	-
Phenol 2/	+	+	-
Methyl Phenol	+	+	-
C_3 Alkyl Phenol (3 isomers)	-	-	-
C_4 Alkyl Phenol	-	-	-
Ethyl Hexanoic Acid	-	-	-
Dimethyl Propanol	-	-	-
Phthalic Acid	-	+	-
Trans-1,2-dichloroethylene 2/	+	+	-
Toluene 1/ 2/	+	-	-
Ethyl Benzene 1/	+	-	-
Acetone	+	-	-
Trichlorotrifluoroethane	+	-	-
Methyl Ethyl Ketone 2/	+	+	+
Hexane	+	-	-
Methyl Isobutyl Ketone 2/	+	+	-
2-hexanol	+	-	-
2-methyl-1-propanol	+	-	-
Tetrachloroethane	+	+	-
2-butanol	+	-	-
1-hexanol	+	-	-
1,1-dichloroethane	+	+	+
[redacted]			
Vinyl chloride 1/	+	+	-
Dimethyl disulfide	-	-	-
Methylene Chloride 2/	+	+	-
Trimethyl Cyclohexanone	-	-	-
Methyl Benzene Methanol	-	-	-
Carbonic Acid, Butyl Phenyl Ester	-	-	-
Propoxy Butane	-	-	-
Di-n-butyl Phthalate 1/	-	+	-
Fluoranthene 2/	-	+	-
Dimethyl Phenol (3 isomers)	+	+	-
Hexanol Acid	+	-	-
Hydroxy Methoxy Benzene	-	-	-
Pentachlorophenol 1/ 2/	+	+	-
Naphthalene 2/	+	+	-
1,1,1-trichloroethane	+	+	-
Camphor 2/	+	+	-
C_3 Alkyl Benzoic Acid	-	-	-
Methyl esters of Ethyl Hexanoic Acid	-	-	-
Benzene Propanic Acid	-	-	-
Heptanol	-	-	-
Heptanone	-	-	-
Indene	-	+	-
Methyl (methy ethanol) cyclohexanol	-	-	-
a-Terpineol	+	-	-
Terpinene-4-ol	-	-	-
[redacted]	+		
Quinoline	-	+	-
Methyl Naphthalene	+	+	-
Acenaphthene 2/	-	+	-
Dibenzofuran	-	-	-
Beta-naphthonitrile	-	-	-
Fluorene	+	-	-
Tributyl Ester of Phosphoric Acid	-	-	-
Phenanthrene/Anthracene 2/	-	+	-
Butyl Methyl Benzene Sulfonamide	-	-	-
Pyrene 2/	-	-	-
Methyl Octanone	-	-	-
Butoxy Propanol	-	-	-
C_3 Alkyl Styrene	-	-	-
Methyl (Propoxyloxy) Ethoxy Propanol	-	-	-
Butyoxy Ethoxy Ethanol	-	-	-
[redacted]	-		
Dimethyl Phenol	-	-	-
Tetra methyl Pentanone	-	-	-
Dibutyl Ether	-	-	-
C_5 Alkyl Benzene	-	-	-
C_3 Alkyl Phenol	-	-	-
C_4 Alkyl Styrene	-	-	-
Methyl Heptenone	-	-	-
Trimethyl Pentandiol	-	-	-
Trimethyl hexane	-	-	-
Methyl Propoxy Propanol	-	-	-
Hydroxy Propoxy Propanol	-	-	-
Butoxy Propoxy Methane	-	-	-
Methyl ester of Acetyl	-	-	-
Pentanoic Acid	-	-	-
Dimethyl Ethyl Benzoic Acid	-	-	-
Hexanone	-	-	-
Methoxymethylethoxy Propanol	-	-	-
Dibutyloxy Propanol	-	-	-
Di Hydroindenone	-	-	-
Methyl Propanoic Acid	-	-	-
Methyl Pentanoic Acid	-	-	-
Butanoic Acid	-	+	-
Isopropanol	-	-	-
Ethyl alcohol	-	-	-
Dibenzofuranone	-	-	-
Methoxyethyl benzene	-	-	-
o-nitrophenol 2/	-	-	-
[redacted] tetra hydrofuran			
Trimethyl phenylidihydroindene			
Aroclor 1254 and 1260 2/	+	+	
C_4 Alkyl Phenanthrene			
Butyl benzl phthalate 2/			
Octanoic Acid			
Nonanoic Acid			
Decanoic Acid			
Dodecanoic Acid			
Tetradecanoic Acid			
Penta-decanoic acid			
Hexadecanoic Acid			
Octadecanoic Acid			

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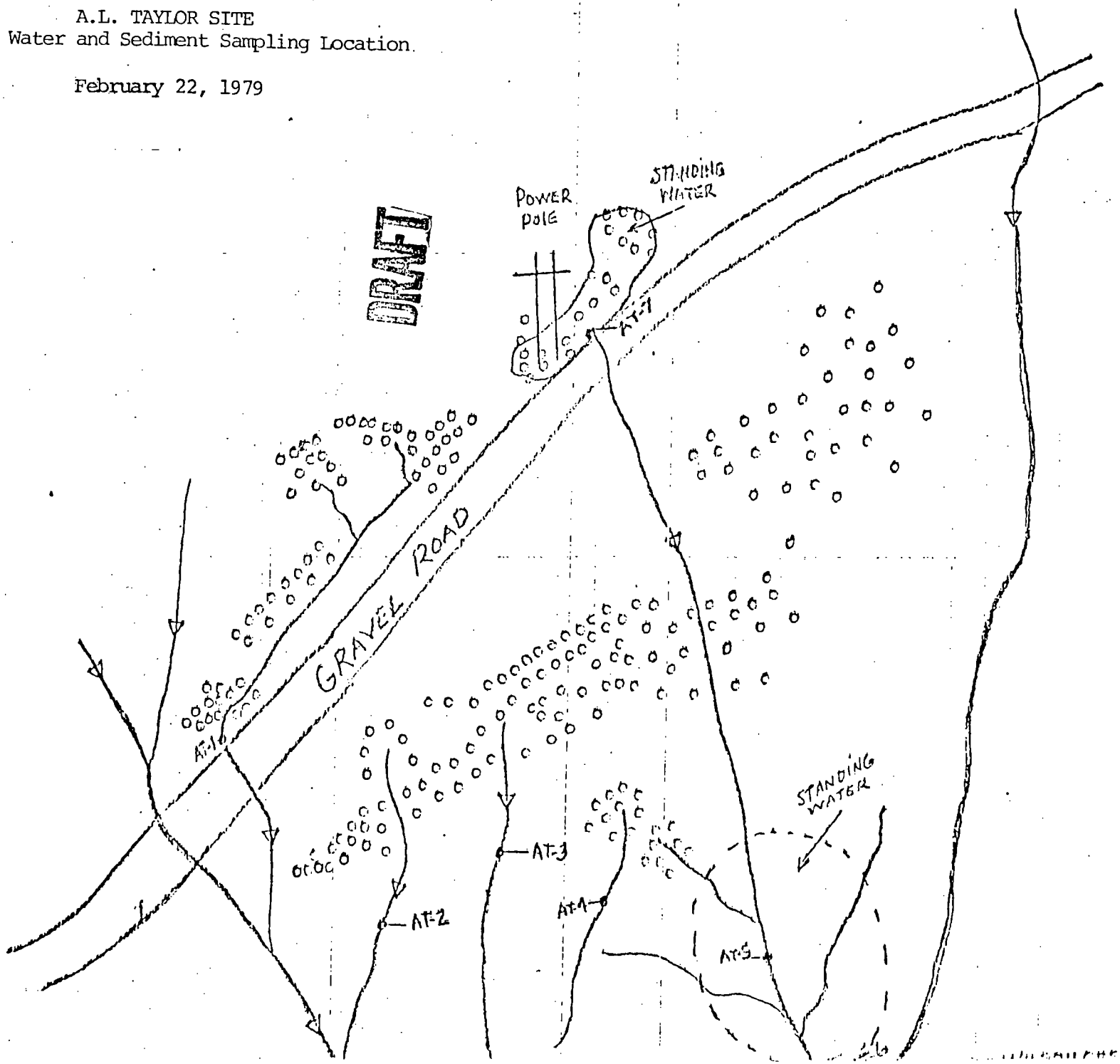
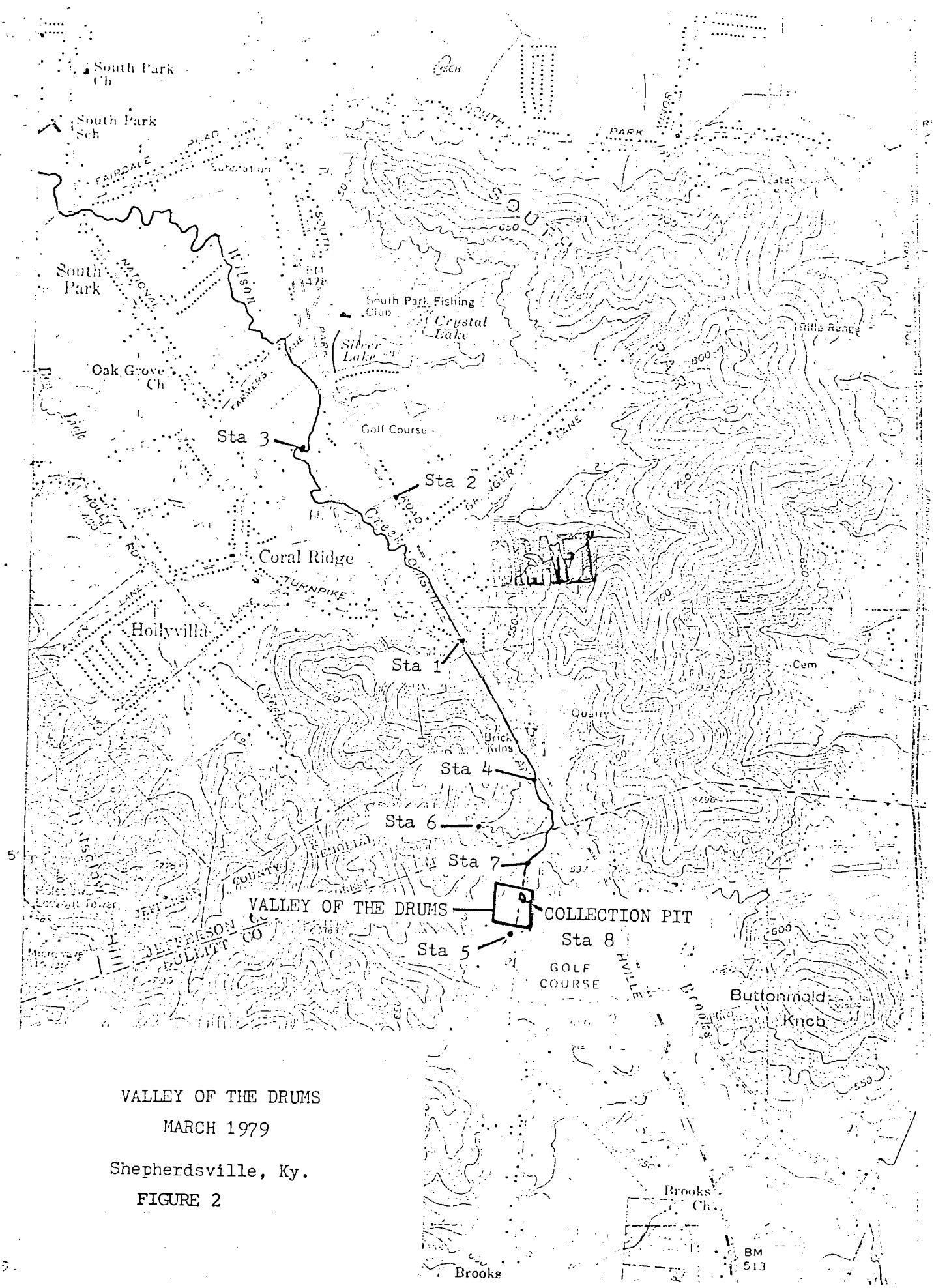
1/ denotes designated Hazardous Substances under Section 311.

FIGURE 1

A.L. TAYLOR SITE
Water and Sediment Sampling Location

February 22, 1979





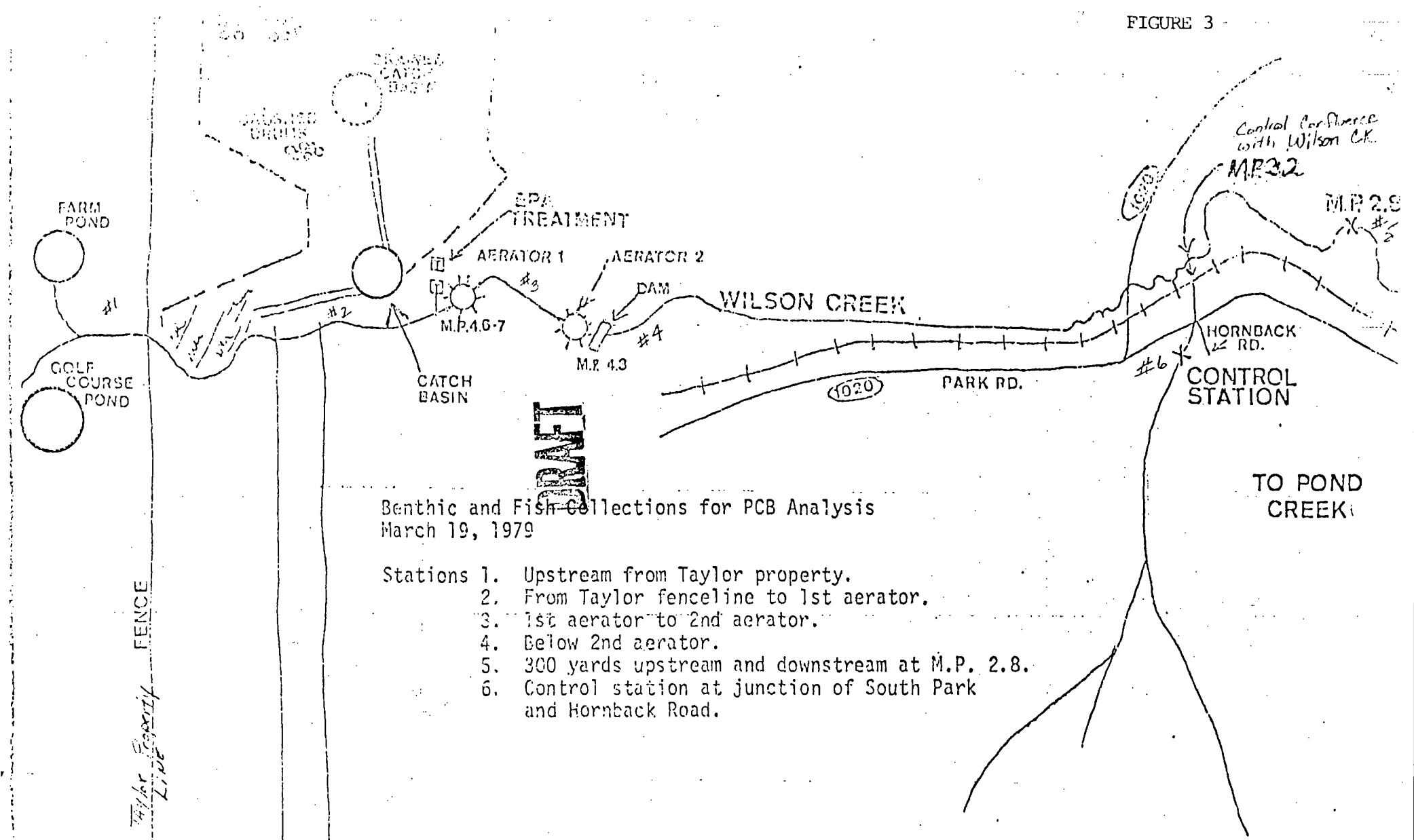
VALLEY OF THE DRUMS

MARCH 1979

Shepherdsville, Ky.

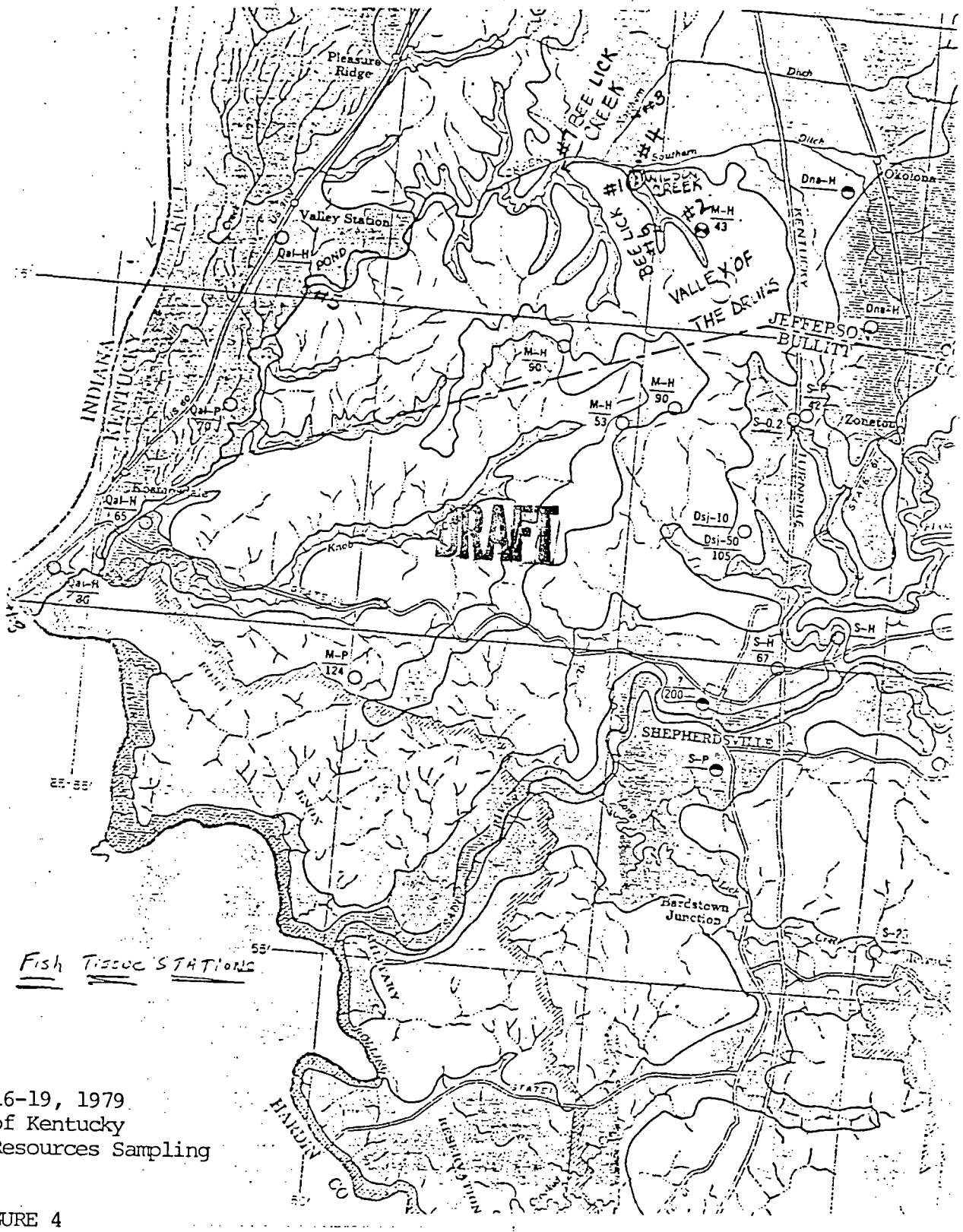
FIGURE 2

FIGURE 3



Benthic and Fish Collections for PCB Analysis
March 19, 1979

Stations
1. Upstream from Taylor property.
2. From Taylor fenceline to 1st aerator.
3. 1st aerator to 2nd aerator.
4. Below 2nd aerator.
5. 300 yards upstream and downstream at M.P. 2.8.
6. Control station at junction of South Park and Hornback Road.



April 16-19, 1979
State of Kentucky
Water Resources Sampling

FIGURE 4

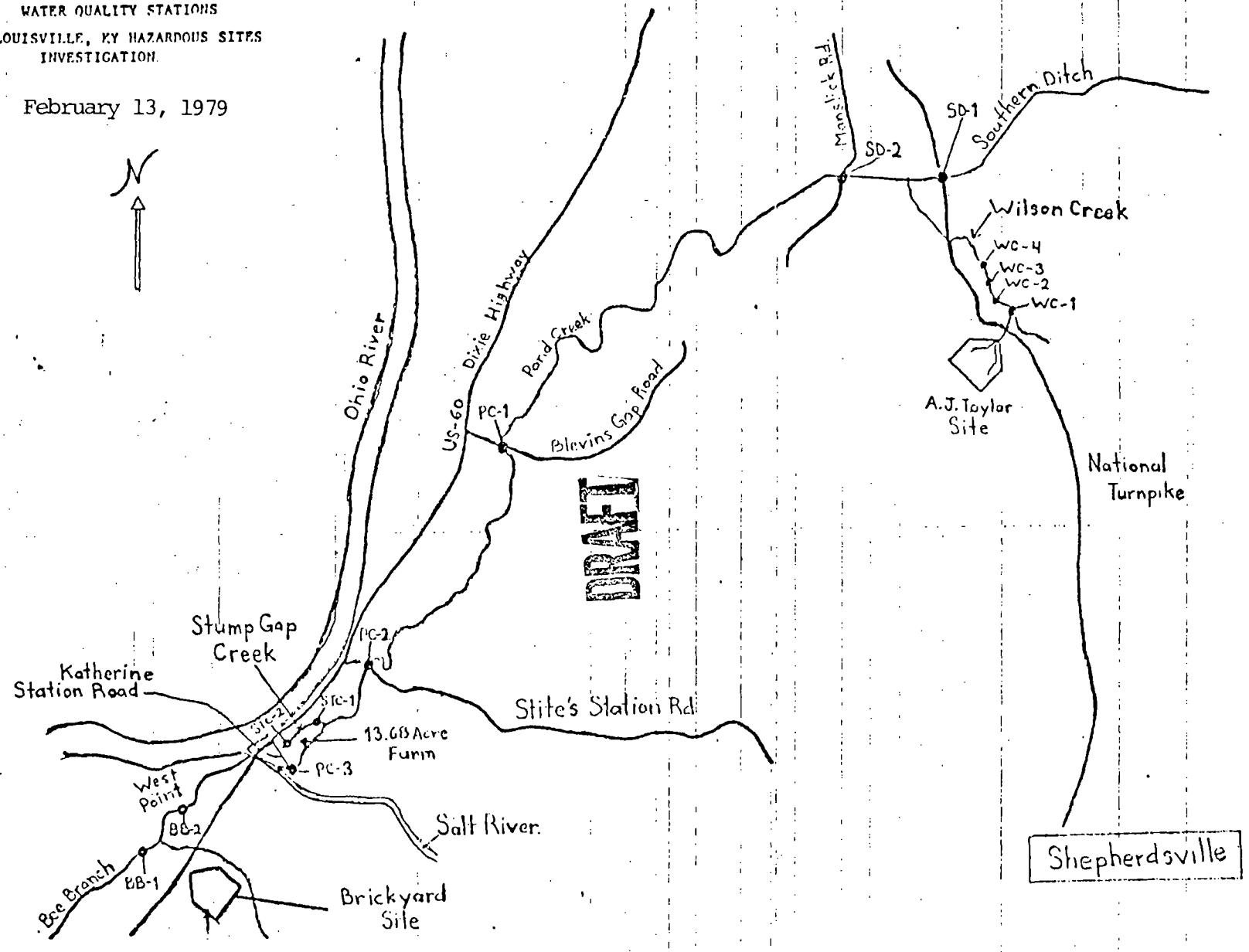
FIGURE 5

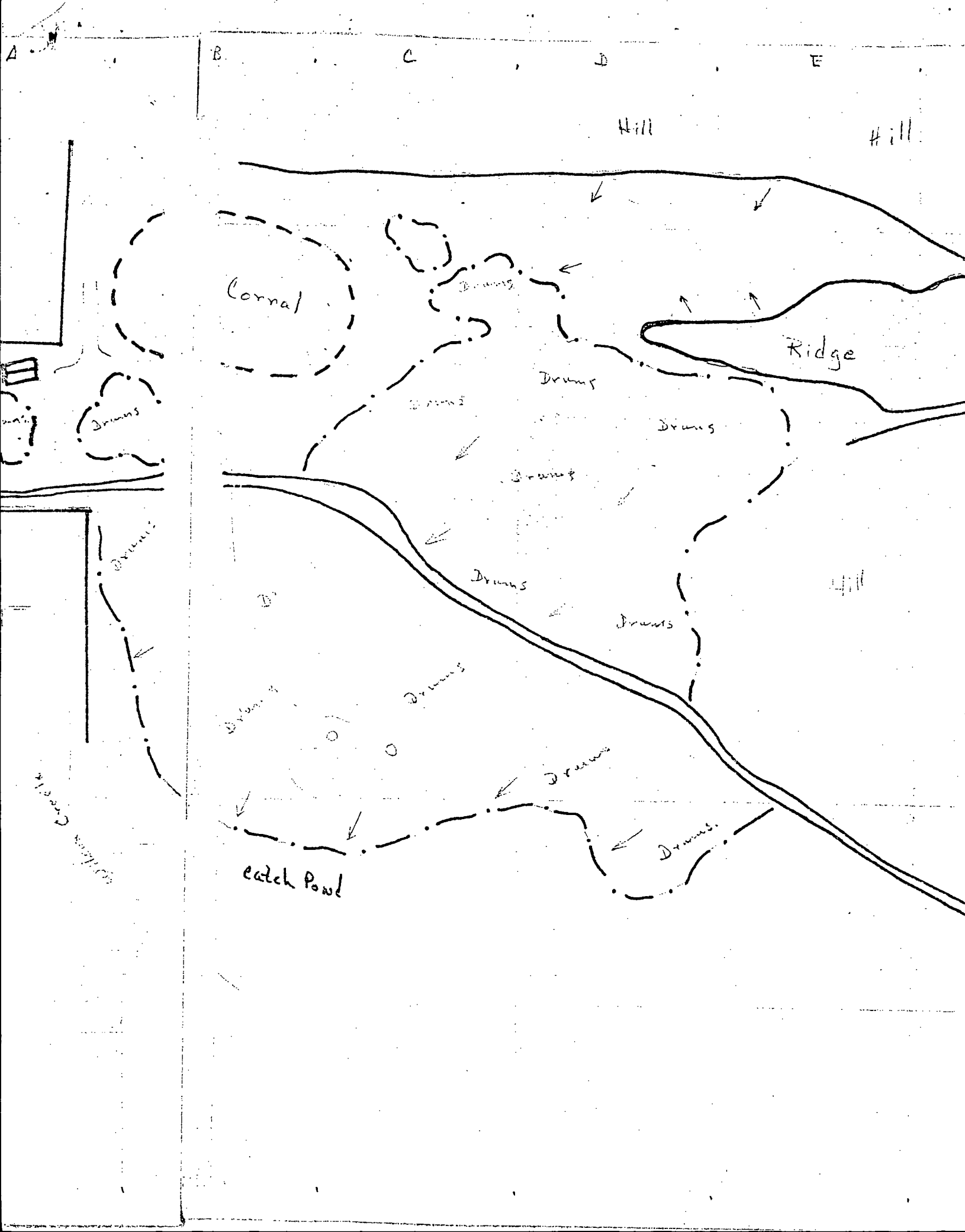
State of Kentucky
Division of Water Resources

WATER QUALITY STATIONS

LOUISVILLE, KY HAZARDOUS SITES INVESTIGATION

February 13, 1979



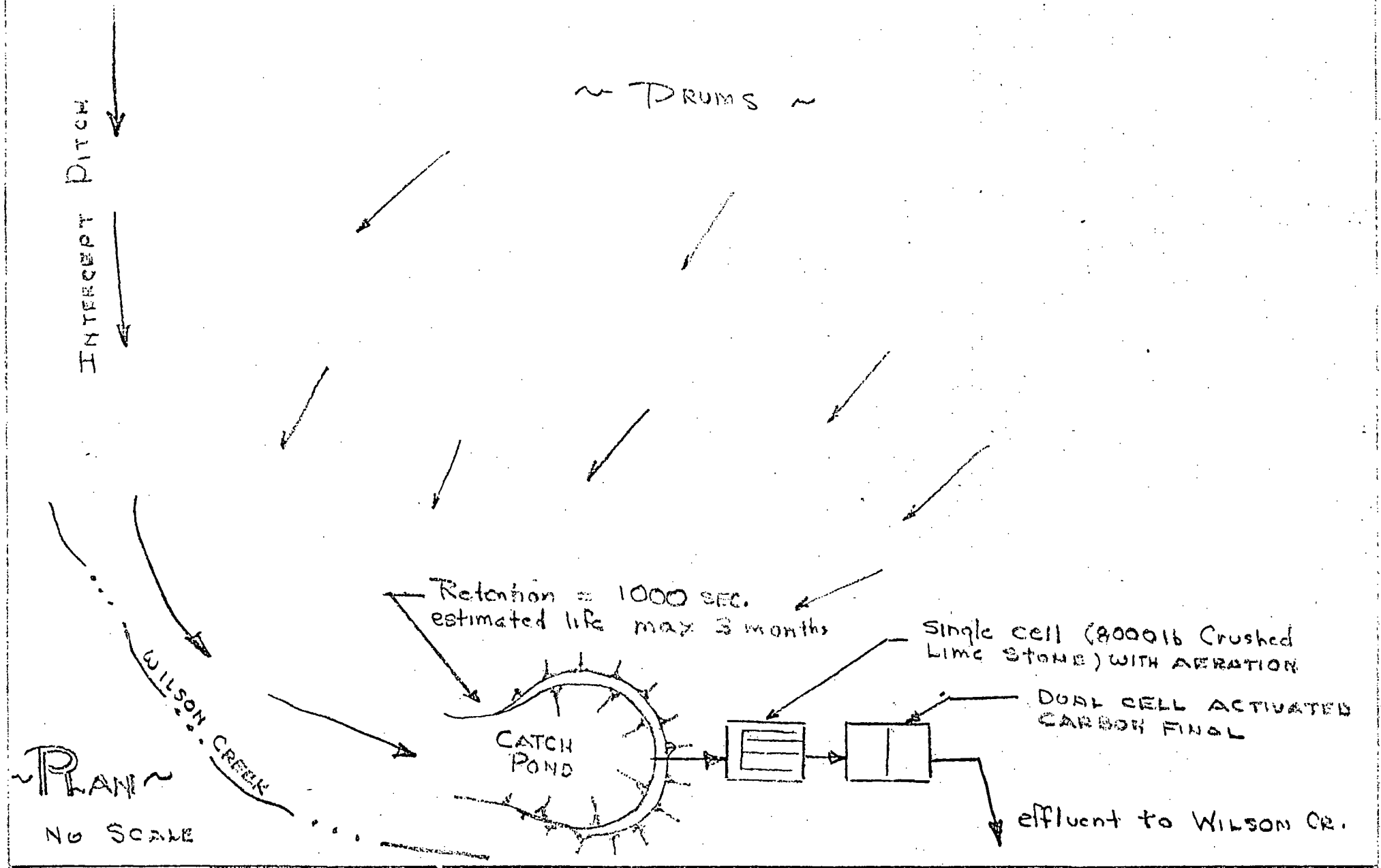

A
B
C
D
E
Hill
Hill
Canal
Ridge
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Drains
Hill
Catch Pond

TAYLOR PROPERTY
SURFACE DRAINAGE
TREATMENT CONCEPT
8 MAR 79
AL SMITH

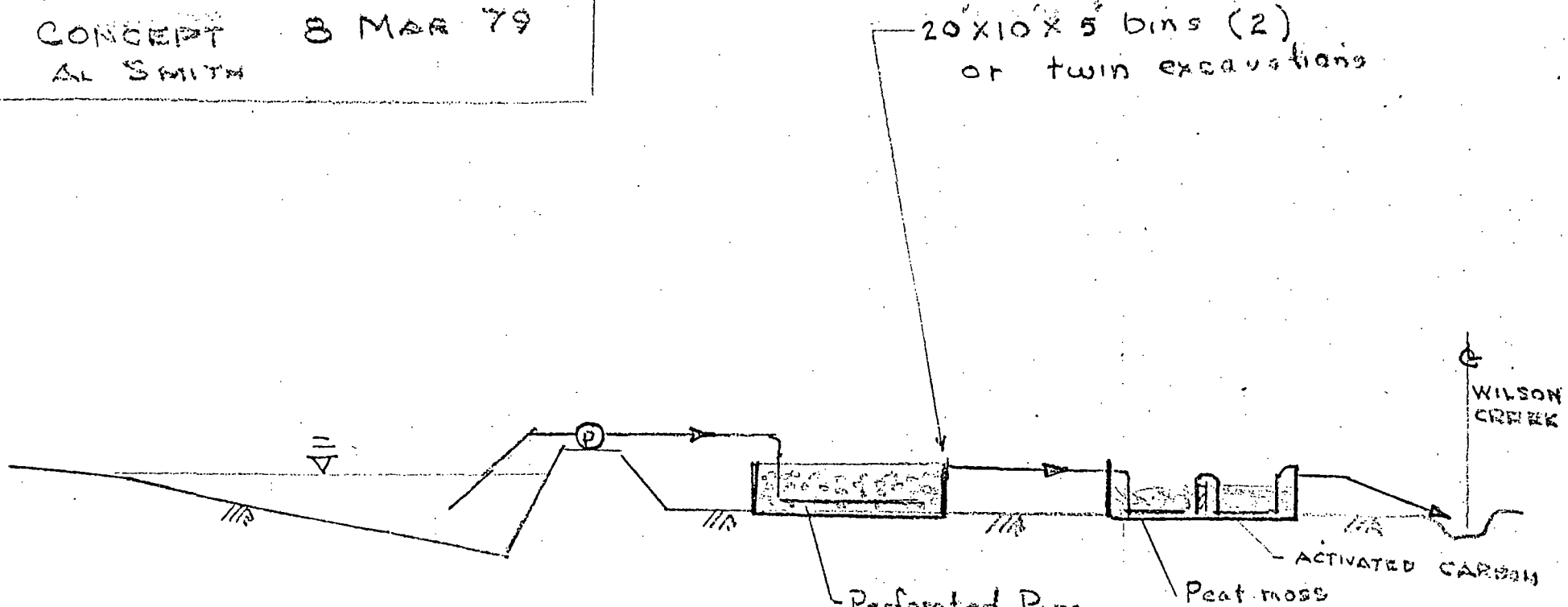
DA = 10 Ac

Runoff Coe "C" = 0.35

Q = ACI = 21 CFS



TAYLOR PROP. SURFACE
DRAINAGE TREATMENT
CONCEPT 8 MAR 79
AL SMITH



NO SCALE

~ PROFILE ~

SAMPLE ANALYSIS

1.	Oil and grease-point source	252ppm
2.	Oil and grease-75' downstream	48ppm
3.	Methyl Ethyl Ketone	5.0ppm
4.	2-Butanol	21.0ppm
5.	Methyl Iso Butyl Ketone	7.0ppm
X 6.	Benzene	.5ppm
7.	3-Methyl 2-Pentanol	5.0ppm
X 8.	Toluene	5.0ppm
9.	Methyl Iso Amyl Ketone	1.0ppm
10.	Methyl Iso Amyl Ketone(Cellosolve)	10.0ppm
11.	5-Methyl 2 Hexanol	
X 12.	Xylene (o & p)	5-10ppm

Metals

Sample 1---	Cadmium	0.028ppm
	Chromium	0.048
	Mercury	none
	Lead	0.99
Sample 2---	Cadmium	none
	Chromium	0.503
	Mercury	none
	Lead	2.67

TABLE 1

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Benzoic Acid									1-25		1-10		10-50	
Methyl Benzoic Acid					10-100		10-100		1-25		1-10		10-50	
C_2 Alkyl Benzoic Acid					10-100		1-10		1-25		1-10		1-10	
C_4 Alkyl Benzoic Acid							1-10				1-10		1-10	
Methyl Benzene Sulfunamide			3.9					37	1-25				1-10	
Unidentified Compounds 1-10 ug/l			7		18		16	1	24		20			
Unidentified Compounds 10-100 ug/l	1		6		11		11	330	13		1			
Xylene (2 isomers)					260		120		470		62		380	
Methyl Pentanol													37	
Methyl Cyclopentanol													42	
Dimethyl Pentanone													37	
Butoxyethanol													23	
Methyl Hydroxy Pentanone					24		170	10-100	220		28		200	
C_2 Alkyl Benzene (3 isomers)					64		21		7.2		5.7		24	
Cyclohexanone									2.4				66	
Dibutoxymethanol (2 isomers)					65		150		86		15		60	
Methyl Styrene					48			10-100					9	
C_5 Alkyl Benzene (5 isomers)					22		11		26				28	
a, a, Dimethyl Benzene Methanol					5.6						19		86	
C_2 Alkyl Styrene					4.7								7.3	
Methyl Benzene Methanol													7.3	
Isophorone											15		37	
Phenoxy Methyl Oxirene								1-10					15	
Phenyl Ether											1.4		2.7	
Chlorophenoxy Propanol													18	
Dimethyl Phtnalate							8.7		8.6		13		16	
Phenoxy Propanediol													57	
Tetra oxadodecane			220		6.6		20		7.2		2.7		29	
Diethyl Phthalate	9.4		17		42		4.9		29		26		44	
Methyl Propyl Ester of Benzoic Acid					7.5				17				3.7	
Pentaoxapentadecane			320		27						4.7		4.1	
Bis (2-ethylhexyl) Phthalate	13		45		3.8		4.9	120	36		7.4		37	
Methyl Butanoic Acid													10-50	
													1-10	

TABLE 1

COMPOUND ug/l	AT-1		AT-2		AT-3		AT-4		AT-5		AT-6		AT-7	
	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.
Benzoic Acid									1-25		1-10		10-50	
Methyl Benzoic Acid					10-100		10-100		1-25		1-10		10-50	
C_2 Alkyl Benzoic Acid					10-100		1-10		1-25		1-10		1-10	
C_4 Alkyl Benzoic Acid							1-10				1-10		1-10	
Methyl Benzene Sulfunamide			3.9					37	1-25				1-10	
Unidentified Compounds 1-10 ug/l			7		18		16	1	24		20			
Unidentified Compounds 10-100 ug/l	1		6		11		11	330	13		1			
Xylene (2 isomers)					260		120		470		62		380	
Methyl Pentanol													37	
Methyl Cyclopentanol													42	
Dimethyl Pentanone													37	
Butoxyethanol													23	
Methyl Hydroxy Pentanone					24		170	10-100	220		28		200	
C_2 Alkyl Benzene (3 isomers)					64		21		7.2		5.7		24	
Cyclohexanone									2.4				66	
Dibutoxymethanol (2 isomers)					65		150		86		15		60	
Methyl Styrene					48			10-100					9	
C_5 Alkyl Benzene (5 isomers)					22		11		26				28	
a, a, Dimethyl Benzene Methanol					5.6						19		86	
C_2 Alkyl Styrene					4.7								7.3	
Methyl Benzene Methanol													7.3	
Isophorone											15		37	
Phenoxy Methyl Oxirene								1-10					15	
Phenyl Ether											1.4		2.7	
Chlorophenoxy Propanol													18	
Dimethyl Phtnalate							8.7		8.6		13		16	
Phenoxy Propanediol													57	
Tetra oxadodecane			220		6.6		20		7.2		2.7		29	
Diethyl Phthalate	9.4		17		42		4.9		29		26		44	
Methyl Propyl Ester of Benzoic					7.5				17				3.7	
Acid					27						4.7		4.1	
Pentaoxapentadecane			320		3.8		4.9	120	36		7.4		37	
Bis (2-ethylhexyl) Phthalate	13		45										10-50	
Methyl Butanoic Acid													1-10	

TABLE 1

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Benzoic Acid									1-25		1-10		10-50	
Methyl Benzoic Acid					10-100		10-100		1-25		1-10		10-50	
C_2 Alkyl Benzoic Acid					10-100		1-10		1-25		1-10		1-10	
C_4 Alkyl Benzoic Acid							1-10				1-10		1-10	
Methyl Benzene Sulfunamide			3.9					37	1-25				1-10	
Unidentified Compounds 1-10 ug/l			7		18		16	1	24		20			
Unidentified Compounds 10-100 ug/l	1		6		11		11	330	13		1			
Xylene (2 isomers)					260		120		470		62		380	
Methyl Pentanol													37	
Methyl Cyclopentanol													42	
Dimethyl Pentanone													37	
Butoxyethanol													23	
Methyl Hydroxy Pentanone					24		170	10-100	220		28		200	
C_2 Alkyl Benzene (3 isomers)					64		21		7.2		5.7		24	
Cyclohexanone									2.4				66	
Dibutoxymethanol (2 isomers)					65		150		86		15		60	
Methyl Styrene					48			10-100					9	
C_5 Alkyl Benzene (5 isomers)					22		11		26				28	
a, a, Dimethyl Benzene Methanol					5.6						19		86	
C_2 Alkyl Styrene					4.7								7.3	
Methyl Benzene Methanol													7.3	
Isophorone											15		37	
Phenoxy Methyl Oxirene								1-10					15	
Phenyl Ether											1.4		2.7	
Chlorophenoxy Propanol													18	
Dimethyl Phtnalate							8.7		8.6		13		16	
Phenoxy Propanediol													57	
Tetra oxadodecane			220		6.6		20		7.2		2.7		29	
Diethyl Phthalate	9.4		17		42		4.9		29		26		44	
Methyl Propyl Ester of Benzoic					7.5				17				3.7	
Acid					27						4.7		4.1	
Pentaoxapentadecane			320		3.8		4.9	120	36		7.4		37	
Bis (2-ethylhexyl) Phthalate	13		45										10-50	
Methyl Butanoic Acid													1-10	

TABLE 1

COMPOUND ug/l	AT-1		AT-2		AT-3		AT-4		AT-5		AT-6		AT-7	
	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.
Benzoic Acid									1-25		1-10		10-50	
Methyl Benzoic Acid					10-100		10-100		1-25		1-10		10-50	
C_2 Alkyl Benzoic Acid					10-100		1-10		1-25		1-10		1-10	
C_4 Alkyl Benzoic Acid							1-10				1-10		1-10	
Methyl Benzene Sulfunamide			3.9					37	1-25				1-10	
Unidentified Compounds 1-10 ug/l			7		18		16	1	24		20			
Unidentified Compounds 10-100 ug/l	1		6		11		11	330	13		1			
Xylene (2 isomers)					260		120		470		62		380	
Methyl Pentanol													37	
Methyl Cyclopentanol													42	
Dimethyl Pentanone													37	
Butoxyethanol													23	
Methyl Hydroxy Pentanone					24		170	10-100	220		28		200	
C_2 Alkyl Benzene (3 isomers)					64		21		7.2		5.7		24	
Cyclohexanone									2.4				66	
Dibutoxymethanol (2 isomers)					65		150		86		15		60	
Methyl Styrene					48			10-100					9	
C_5 Alkyl Benzene (5 isomers)					22		11		26				28	
a, a, Dimethyl Benzene Methanol					5.6						19		86	
C_2 Alkyl Styrene					4.7								7.3	
Methyl Benzene Methanol													7.3	
Isophorone											15		37	
Phenoxy Methyl Oxirene								1-10					15	
Phenyl Ether											1.4		2.7	
Chlorophenoxy Propanol													18	
Dimethyl Phtnalate							8.7		8.6		13		16	
Phenoxy Propanediol													57	
Tetra oxadodecane			220		6.6		20		7.2		2.7		29	
Diethyl Phthalate	9.4		17		42		4.9		29		26		44	
Methyl Propyl Ester of Benzoic					7.5				17				3.7	
Acid					27						4.7		4.1	
Pentaoxapentadecane			320		3.8		4.9	120	36		7.4		37	
Bis (2-ethylhexyl) Phthalate	13		45										10-50	
Methyl Butanoic Acid													1-10	

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Pentanoic Acid								T < 1						
Phenol							T < 1	9.5	T < 1		T < 1		44	
Methyl Phenol							1-10		1-25		1-10		10-50	
C_2 Alkyl Phenol					1-10				1-25		100		1-10	
C_4 Alkyl Phenol					96				1-25				1-10	
Ethyl Hexanoic Acid							42		10-100		10-100		10-50	
Dimethyl Propanol							10-100				380		10-50	
Phthalic Acid							1-10	8	1-25		100		1-10	
trans-1,2-dichloroethylene	T < 5	T < .025	T < 5		75	T < .025	26		36		T < 5		6.4	
Toluene					340	.29	160		180				160	
Ethyl Benzene					69	0.6	10		24				31	
Acetone						6.0			400				730	
Trichlorotrifluoroethane													5.4	
Methyl Ethyl Ketone					330				410				690	
Hexane													2.3	
Methyl Isobutyl Ketone							880		1100				1600	
2-Hexanol							78		9.6		T < 5		37	
2-methyl-1-propanol							T < 5		T 5				5.2	
Tetrachloroethane	6.4		18		12		5.7		0.2		6.2			
1-butanol									T < 5				T < 5	
1-hexanol									T < 5					
1, 1-dichloroethane					T < 5		T < 5		T < 5				T < 5	
Vinyl Chloride														
Dimethyl disulfide					6		T < 5						T < 5	
Methylene Chloride	6.6		7.9		5.3				9.4		7.4			
Tri methyl Cyclohexanone					32						15			
Methyl Benzene Methanol											1.2			
Carbonic Acid											3.5			
Propoxx Butane					38						1.2			
Di-n-butyl Phthalate	39		7.5		5.6	1-10	10		9.6		16			
Fluoranthene							4.9		7.2		T < 1			
Dimethyl Phenol											1-10			
Hexanol Acid											12			
Hydroxy Methoxy Benzene					1-10				1-25		1-10			
Pentachlorophenol											4.3			
Naphthalene					1.9	11	T < 1		4.5					
1, 1, -trichloroethane									9.4					
Camphor									230					

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Pentanoic Acid								T < 1						
Phenol							T < 1	9.5	T < 1		T < 1		44	
Methyl Phenol							1-10		1-25		1-10		10-50	
C_2 Alkyl Phenol					1-10				1-25		100		1-10	
C_4 Alkyl Phenol					96				1-25				1-10	
Ethyl Hexanoic Acid							42		10-100		10-100		10-50	
Dimethyl Propanol							10-100				380		10-50	
Phthalic Acid							1-10	8	1-25		100		1-10	
trans-1,2-dichloroethylene	T < 5	T < .025	T < 5		75	T < .025	26		36		T < 5		6.4	
Toluene					340	.29	160		180				160	
Ethyl Benzene					69	0.6	10		24				31	
Acetone						6.0			400				730	
Trichlorotrifluoroethane													5.4	
Methyl Ethyl Ketone					330				410				690	
Hexane													2.3	
Methyl Isobutyl Ketone							880		1100				1600	
2-Hexanol							78		9.6		T < 5		37	
2-methyl-1-propanol							T < 5		T 5				5.2	
Tetrachloroethane	6.4		18		12		5.7		0.2		6.2			
1-butanol									T < 5				T < 5	
1-hexanol									T < 5					
1, 1-dichloroethane					T < 5		T < 5		T < 5				T < 5	
Vinyl Chloride														
Dimethyl disulfide					6		T < 5						T < 5	
Methylene Chloride	6.6		7.9		5.3				9.4		7.4			
Tri methyl Cyclohexanone					32						15			
Methyl Benzene Methanol											1.2			
Carbonic Acid											3.5			
Propoxx Butane					38						1.2			
Di-n-butyl Phthalate	39		7.5		5.6	1-10	10		9.6		16			
Fluoranthene							4.9		7.2		T < 1			
Dimethyl Phenol											1-10			
Hexanol Acid											12			
Hydroxy Methoxy Benzene					1-10				1-25		1-10			
Pentachlorophenol											4.3			
Naphthalene					1.9	11	T < 1		4.5					
1, 1, -trichloroethane									9.4					
Camphor									230					

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Pentanoic Acid								T < 1						
Phenol							T < 1	9.5	T < 1		T < 1		44	
Methyl Phenol							1-10		1-25		1-10		10-50	
C_2 Alkyl Phenol					1-10				1-25		100		1-10	
C_4 Alkyl Phenol					96				1-25				1-10	
Ethyl Hexanoic Acid							42		10-100		10-100		10-50	
Dimethyl Propanol							10-100				380		10-50	
Phthalic Acid							1-10	8	1-25		100		1-10	
trans-1,2-dichloroethylene	T < 5	T < .025	T < 5		75	T < .025	26		36		T < 5		6.4	
Toluene					340	.29	160		180				160	
Ethyl Benzene					69	0.6	10		24				31	
Acetone						6.0			400				730	
Trichlorotrifluoroethane													5.4	
Methyl Ethyl Ketone					330				410				690	
Hexane													2.3	
Methyl Isobutyl Ketone							880		1100				1600	
2-Hexanol							78		9.6		T < 5		37	
2-methyl-1-propanol							T < 5		T 5				5.2	
Tetrachloroethane	6.4		18		12		5.7		0.2		6.2			
1-butanol									T < 5				T < 5	
1-hexanol									T < 5					
1, 1-dichloroethane					T < 5		T < 5		T < 5				T < 5	
Vinyl Chloride														
Dimethyl disulfide					6		T < 5						T < 5	
Methylene Chloride	6.6		7.9		5.3				9.4		7.4			
Tri methyl Cyclohexanone					32						15			
Methyl Benzene Methanol											1.2			
Carbonic Acid											3.5			
Propoxx Butane					38						1.2			
Di-n-butyl Phthalate	39		7.5		5.6	1-10	10		9.6		16			
Fluoranthene							4.9		7.2		T < 1			
Dimethyl Phenol											1-10			
Hexanol Acid											12			
Hydroxy Methoxy Benzene					1-10				1-25		1-10			
Pentachlorophenol											4.3			
Naphthalene					1.9	11	T < 1		4.5					
1, 1, -trichloroethane									9.4					
Camphor									230					

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
Pentanoic Acid								T < 1						
Phenol							T < 1	9.5	T < 1		T < 1		44	
Methyl Phenol							1-10		1-25		1-10		10-50	
C_2 Alkyl Phenol					1-10				1-25		100		1-10	
C_4 Alkyl Phenol					96				1-25				1-10	
Ethyl Hexanoic Acid							42		10-100		10-100		10-50	
Dimethyl Propanol							10-100				380		10-50	
Phthalic Acid							1-10	8	1-25		100		1-10	
trans-1,2-dichloroethylene	T < 5	T < .025	T < 5		75	T < .025	26		36		T < 5		6.4	
Toluene					340	.29	160		180				160	
Ethyl Benzene					69	0.6	10		24				31	
Acetone						6.0			400				730	
Trichlorotrifluoroethane													5.4	
Methyl Ethyl Ketone					330				410				690	
Hexane													2.3	
Methyl Isobutyl Ketone							880		1100				1600	
2-Hexanol							78		9.6		T < 5		37	
2-methyl-1-propanol							T < 5		T 5				5.2	
Tetrachloroethane	6.4		18		12		5.7		0.2		6.2			
1-butanol									T < 5				T < 5	
1-hexanol									T < 5					
1, 1-dichloroethane					T < 5		T < 5		T < 5				T < 5	
Vinyl Chloride														
Dimethyl disulfide					6		T < 5						T < 5	
Methylene Chloride	6.6		7.9		5.3				9.4		7.4			
Tri methyl Cyclohexanone					32						15			
Methyl Benzene Methanol											1.2			
Carbonic Acid											3.5			
Propoxx Butane					38						1.2			
Di-n-butyl Phthalate	39		7.5		5.6	1-10	10		9.6		16			
Fluoranthene							4.9		7.2		T < 1			
Dimethyl Phenol											1-10			
Hexanol Acid											12			
Hydroxy Methoxy Benzene					1-10				1-25		1-10			
Pentachlorophenol											4.3			
Naphthalene					1.9	11	T < 1.		4.5					
1, 1, -trichloroethane									9.4					
Camphor									230					

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
C_3 Alkyl Benzoic Acid						1-10	1-10		1-25					
Methylesters of Ethyl Hexanoic Acid									1-25					
Benzene Propanic Acid									1-25					
Heptanol									14					
Heptanone									220					
Incene									2.4					
Methyl (methylethanol) cyclohexanol									62					
a-Terpineol									400					
Terpinene									110					
Isophorone					49		20		19					
Quinoline									9.6					
Methyl Naphthalene								1-10	9.6					
Acenaphthene									12					
Dipenzofuran									4.8					
Beta-Naphthonitrile									4.8					
Fluorene									72					
Tributyl Ester of Phosphoric Acid									7.2					
Phenanthrene/Anthracene								1-10	5.7					
Butyl Methyl Benzene Sulfonamide									17					
Pyrene									2.2					
Methyl Octanone									2.2					
Butoxy Propanol							3.5							
C_2 Alkyl Styrene					4.7		6.2							
Methyl (Propoxyloxy) Ethoxy Propanol					24		110							
Butyoxy Ethoxy Ethanol							12							
Dimethyl Phenol							11							
Tetra methyl Pentanone							1-10							
Dibutyl Ether					5.6		0.2							
C_5 Alkyl Benzene					1.4									
C_3 Alkyl Phenol					11			1-10						
Alkyl Styrene					2.5			1-10						
Methyl Heptenone			4.5											

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
C_3 Alkyl Benzoic Acid						1-10	1-10		1-25					
Methylesters of Ethyl Hexanoic Acid									1-25					
Benzene Propanic Acid									1-25					
Heptanol									14					
Heptanone									220					
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Butyoxy Ethoxy Ethanol							12							
Dimethyl Phenol							11							
Tetra methyl Pentanone							1-10							
Dibutyl Ether					5.6		0.2							
C_5 Alkyl Benzene					1.4									
C_3 Alkyl Phenol					11			1-10						
Alkyl Styrene					2.5			1-10						
Methyl Heptenone			4.5											

COMPOUND ug/l	AT-1		AT-2		AT-3		AT-4		AT-5		AT-6		AT-7	
	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.	Water	Sed.
C_3 Alkyl Benzoic Acid						1-10	1-10		1-25					
Methylesters of Ethyl Hexanoic Acid									1-25					
Benzene Propanic Acid									1-25					
Heptanol									14					
Heptanone									220					
Incene									2.4					
Methyl (methylethanol) cyclohexanol									62					
a-Terpineol									400					
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Isophorone					49		20		19					
Quinoline									9.6					
Methyl Naphthalene								1-10	9.6					
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C_2 Alkyl Styrene					4.7		6.2							
Methyl (Propoxyloxy) Ethoxy Propanol					24		110							
Butyoxy Ethoxy Ethanol							12							
Dimethyl Phenol							11							
Tetra methyl Pentanone							1-10							
Dibutyl Ether					5.6		0.2							
C_5 Alkyl Benzene					1.4									
C_3 Alkyl Phenol					11			1-10						
Alkyl Styrene					2.5			1-10						
Methyl Heptenone			4.5											

COMPOUND ug/l	AT-1 Water	AT-1 Sed.	AT-2 Water	AT-2 Sed.	AT-3 Water	AT-3 Sed.	AT-4 Water	AT-4 Sed.	AT-5 Water	AT-5 Sed.	AT-6 Water	AT-6 Sed.	AT-7 Water	AT-7 Sed.
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Methyl (Propoxyloxy) Ethoxy Propanol					24		110							
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Tetra methyl Pentanone							1-10							
Dibutyl Ether					5.6		0.2							
C_5 Alkyl Benzene					1.4									
C_3 Alkyl Phenol					11			1-10						
Alkyl Styrene					2.5			1-10						
Methyl Heptenone			4.5											